

REMARKS

In the Office Action, the Examiner rejected claims 1-18 under 103(a) as being unpatentable over United States Application 6,067,409 issued to Scepanovic, et al. ("Scepanovic") in view of United States Application 5,822,214 issued to Rostoker, et al. ("Rostoker").

Applicants have not amended, canceled or added any claim. Accordingly, claims 1-18 remain pending in the application.

L Rejection of Claims 1-9 Under § 103(a)

In the Office Action, the Examiner rejected claims 1-9 under § 103(a) as being unpatentable over Scepanovic in view of Rostoker. Claims 2-9 are dependent directly or indirectly on independent claim 1. Claim 1 recites a method of placing a set of circuit elements in the circuit layout for a placer that partitions a region of a circuit layout into several sub-regions. This method identifies during a placement operation, for a set of sub-regions that contain the circuit elements, a connection graph that connects the set of sub-regions. The connection graph has at least one edge that is at least partially diagonal. The method identifies a placement cost from an attribute of the connection graph. The placement cost specifies a cost for the placement of the circuit elements. The method uses the placement cost, during a placement operation, to identify a placement for the circuit elements. The placement specifies positions in the circuit layout for the circuit elements.

Applicants respectfully submit that the combination of Scepanovic and Rostoker does not disclose teach, or even suggest such a method. Scepanovic describes a method that places cells by computing an affinity for improving cell placement. Scepanovic computes this affinity for improving cell placement by only considering vertical and horizontal routes. See Scepanovic,

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column 43, lines 34-50. Therefore, Scepanovic does not describe a method that identifies, during a placement operation, a connection graph that connects the set of sub-regions, where the connection graph has at least one edge that is at least partially diagonal, as recited in claim 1.

The Examiner states that Rostoker discloses such a connection graph that has at least one edge that is at least partially diagonal. However, Rostoker describes diagonal routes used during a routing operation. See Rostoker, column 58, lines 23-35. Hence, in contrast to claim 1, these diagonal routes are not identified during a placement operation. Applicants respectfully submit that a placement operation and routing operation are different operations. Therefore, the combination of Scepanovic and Rostoker does not disclose, teach or even suggest a method that identifies, during a placement operation, a connection graph that connects a set of sub-regions, where the connection graph has at least one edge that is at least partially diagonal, as recited in claim 1.

Accordingly, Applicants respectfully submit that Rostoker does not render claim 1 unpatentable. As claims 2-9 are dependent on claim 1, Applicants respectfully submit that claims 2-9 are patentable over Rostoker for at least the same reasons. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claims 1-9.

II. Rejection of Claims 10-18 Under § 103(a)

In the Office Action, the Examiner rejected claims 10-18 under § 103(a) as being unpatentable over Scepanovic in view of Rostoker. Claims 11-18 are dependent directly or indirectly on independent claim 10. Claim 10 recites a computer readable medium that stores a program for placing a set of circuit elements in the circuit layout. This computer program is for a placer that partitions a region of a circuit layout into several sub-regions. The computer program

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has a first set of instructions for identifying during a placement operation, for a set of sub-regions that contain the circuit elements, a connection graph that connects the set of sub-regions. The connection graph has at least one edge that is at least partially diagonal. The computer program has a second set of instructions for identifying a placement cost from an attribute of the connection graph. The placement cost specifies a cost for the placement of the circuit elements. The computer program has a third set of instructions for using the placement cost, during a placement operation, to define a position in the in the circuit layout for the circuit elements.

Applicants respectfully submit that the combination of Scepanovic and Rostoker does not disclose teach, or even suggest such a computer program. Scepanovic describes a method that places cells by computing an affinity for improving cell placement. Scepanovic computes this affinity for improving cell placement by only considering vertical and horizontal routes. See Scepanovic, column 43, lines 34-50. Therefore, Scepanovic does not describe a computer readable medium that includes sets of instructions that identify, during a placement operation, a connection graph that connects the set of sub-regions, where the connection graph has at least one edge that is at least partially diagonal, as recited in claim 10.

The Examiner states that Rostoker discloses such a connection graph that has at least one edge that is at least partially diagonal. However, Rostoker describes diagonal routes used during a routing operation. See Rostoker, column 58, lines 23-35. Hence, in contrast to claim 10, these diagonal routes are not identified during a placement operation. Applicants respectfully submit that a placement operation and routing operation are different operations. Therefore, the combination of Scepanovic and Rostoker does not disclose, teach or even suggest a computer readable medium that includes sets of instructions that identify, during a placement operation, a

connection graph that connects a set of sub-regions, where the connection graph has at least one edge that is at least partially diagonal, as recited in claim 10.

Accordingly, Applicants respectfully submit that Rostoker does not render claim 10 unpatentable. As claims 11-18 are dependent on claim 10, Applicants respectfully submit that claims 11-18 are patentable over Rostoker for at least the same reasons. In view of the foregoing, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claims 10-18.

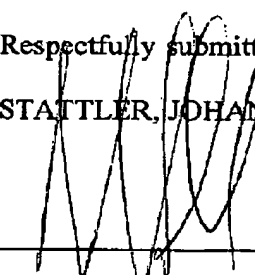
CONCLUSION

In view of the foregoing, it is submitted that all pending claims, namely claims 1-18, are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance is earnestly solicited at the earliest possible date.

Respectfully submitted,

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